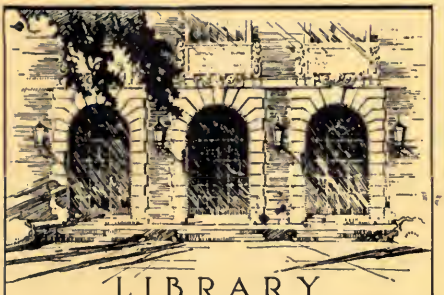

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Three New Varieties of Bush Lima Beans

By W. A. Huelsen

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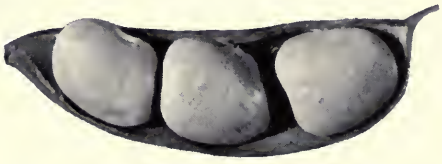
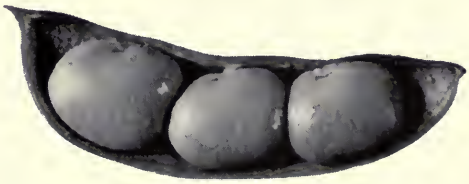
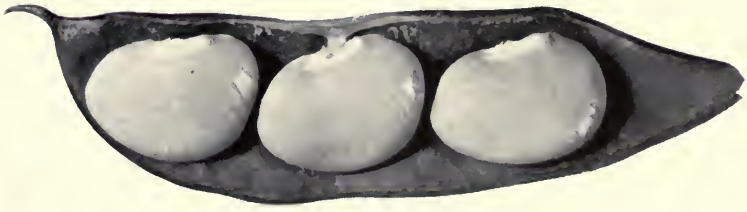
Baby Potato



Early Baby Potato



Illinois Large Podded



UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION

Bulletin 461

SUMMARY

IN BREEDING WORK with lima beans at the Illinois Station since 1930 three varieties have been developed and are now available in the seed trade.

Illinois Large Podded, selected out of an artificial cross between two individual plant selections of Henderson, is a truck-grower's variety, not a canning type. It is a large-vined bush lima, has a "paper" pod, is easily shelled, has a good shelling percentage, and has culinary qualities which, tho not equal to Fordhook, are acceptable. The beans are large and flat, and maturity is uniform. Yields have been comparatively high.

The other two varieties, Baby Potato and Early Baby Potato, differing from each other mainly in time of maturity, were segregated out of a single plant selection of Henderson crossed accidentally with a potato-lima variety. Both are canner's and freezer's varieties, easy viners, having pronounced pod concentration and uniform maturity, yields equal to or higher than Henderson, and excellent canning quality, resembling Fordhook somewhat in flavor. Early Baby Potato matures at the same time as Henderson, and Baby Potato about a week later.

The pods and beans shown on the cover are natural size.

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Seed of the three new varieties of lima beans described in this bulletin is not available at the Illinois Agricultural Experiment Station either for free distribution or for sale. It can be obtained thru regular trade channels.

Urbana, Illinois December, 1939

Publications in the Bulletin series report the results of investigations made or sponsored by the Experiment Station

Three New Varieties of Bush Lima Beans: Baby Potato, Early Baby Potato, and Illinois Large Podded

By W. A. Huelsen, Chief in Olericulture

PRODUCTION of bush lima beans in the northern states is practically limited to two varieties—Fordhook and Henderson. Fordhook, having large pods, large beans, and exceptionally good culinary quality, is the favorite on the fresh-vegetable market. Henderson, with its small flat beans, uniform ripening, and easy shelling, is the only variety used for canning. Both varieties are used for freezing, but for this purpose Henderson predominates.

The Fordhook variety, extremely sensitive to adverse environment, is seldom grown in Illinois because the set of pods when grown here is almost always very poor. Tho this variety has excellent canning qualities, according to tests at the Illinois Station, it cannot be used for canning commercially because the pods do not open readily and threshing in a viner is therefore practically impossible.

Henderson, on the other hand, produces well in Illinois even in unfavorable seasons, and is very easily vined. It has, however, several disadvantages. Its flavor is rather flat at best; and in the canning process it frequently develops an unpleasant flavor, leaving a bitter after-taste. Moreover, the bean is not particularly attractive in color, even in the earliest stages of maturity; and many of the beans turn white at a relatively early stage.

Thus neither of these two varieties, Fordhook and Henderson, has all of the characteristics essential in a good variety. In the experimental breeding work with lima beans at the several experiment stations the common objective has consequently been to combine the high productivity of Henderson with the outstanding color and flavor of Fordhook, seeking in the recombinations of plant characters a more productive shipping variety, a more desirable canning type, and an attractive bean for freezing. Some success has attended these efforts.

At the Illinois Station one aim of the breeding work with lima beans has been to produce a high-yielding fresh-market variety having the quality, pod and bean size of Fordhook. This final objective has

Fig. 1.—Green beans and pods of new varieties of lima beans: Early Baby Potato (*left*); Illinois Large Podded (*right*); and Henderson (*center*), used as a standard for comparison

not been achieved. Only one new type developed in the work toward this objective seems worthy of introduction at present, Illinois Large Podded, described on pages 117 to 120.

The second aim has been to introduce some of the quality of the potato-lima types into Henderson without reducing the yields. A new variety embodying these changes would be a great improvement over existing canning and freezing varieties. Considerable success has attended these efforts, and two varieties of an entirely new type, called Baby Potato and Early Baby Potato, described on pages 111 to 117, seem worthy of introduction. Baby Potato variety received highest award in 1939 in the All-America Trials of the American Seed Trade Association.

BREEDING METHODS USED

Selections from Henderson strains. The early breeding work with lima beans at the Illinois Station, beginning in 1930, consisted mainly of selecting within the Henderson variety for better types. No important improvements resulted from this type of breeding work.

Artificial crosses of Henderson strains. A number of crosses between strains of Henderson made in 1930 by artificial means in the greenhouse resulted in some striking variations, out of which the new Illinois Large Podded, described on pages 117 to 120, was selected.

Selections from fortuitous crosses involving many varieties. Most of the breeding work has, however, consisted of selections out of numerous fortuitous crosses, apparently due to insect visitation, involving a great many varieties of lima beans. The fortuitous crossing occurred despite the fact that lima beans have generally been regarded as strictly self-fertilizing.

The unexpected cross-pollination occurred in an extensive variety test in 1932, including all the better known bush and pole varieties of lima beans. The fact that cross-pollination had occurred became evident the next year (1933) when a large number of colored beans, evidently crosses with Jackson Wonder, appeared in the progenies of plant selections made from other varieties in 1932. The cross-pollination was evidently the work of bees, as in 1934 and subsequently the plots were watched closely and many bees were seen to tear the petals apart and enter the blossoms before the flowers opened. Both bumblebees and honeybees were attracted by the lima-bean blossoms, and both entered the blossoms readily. Inasmuch as the 1932 variety test had been located next to a field of red clover, both bumblebees and honey-

bees were undoubtedly present in large numbers while the beans were in bloom. At any rate, cross-pollination did occur in 1932; and that and subsequent crossing provided a large number of fortuitous crosses which could otherwise have been acquired only by the most painstaking emasculation and artificial pollination.

The observation that the crossing was due to the activity of bees is supported by a later investigation at the Alabama Agricultural Experiment Station. Barrons[2*] at that station planted the bush variety Henderson and the vined type Sieva at intervals in alternating rows ranging from 1 to 9 yards apart, with cowpeas planted between the rows. Where the rows were 1 yard apart 5.03 percent crossing occurred, and where they were 9 yards apart only 1.1 percent crossing occurred. Crossing was attributed to bumblebees and thrips.

Since 1935, therefore, the work on lima-bean breeding at the Illinois Station has been conducted on the assumption that lima beans are a cross-pollinated crop. Plant selections of a cross-pollinated crop should ordinarily be covered, but experience has proved that on lima beans the pods set very poorly under cheesecloth plant covers. Instead, therefore, the beans have been grouped by types, so far as possible, and each type has been planted in a plot surrounded by four to ten rows of field corn. Within each of these comparatively isolated plots the beans taken from each plant are planted in a separate row. In order to reduce the number of bees visiting the beans, the plots are located away from clover or alfalfa. Complete isolation is difficult to arrange, because of lack of space, but it has been found that bees show no tendency to fly from one plot to another if each plot is surrounded by four or more rows of field corn. If the bees once gain enough altitude to fly over the barrier of field corn, their tendency is to return to the hive. At the hive they clean themselves of pollen; and consequently it is assumed that even tho on their return they go to a different plot, there will be no cross-pollination.

When a type has become reasonably well established under this system of semi-isolation, numerous plant selections are made from it and the seeds are planted in plant-rows in a plot located at least a quarter of a mile from other beans. Two generations of severe roguing and reselection on isolated plots are usually sufficient to insure a reasonably uniform strain.

Thruout this work with fortuitous crosses the variations in plant, pod, and bean type have been extremely diverse; but most of the characters, the mode of inheritance of which is unknown, have been

*These numbers refer to literature citations on page 120.

difficult to fix. Linkage groups with a very limited amount of crossing-over seem to be present, making it very difficult to secure some of the desired character recombinations. From this work, nevertheless, has come two new strains of a new type, Baby Potato and Early Baby Potato.

INTRODUCING THE NEW VARIETIES

Growing new lima-bean varieties for two generations in isolated plots in Illinois, as described above, did not give the uniformity requisite to canning varieties, and arrangements were therefore made to multiply the new introductions in a section free from cross-pollination due to bees. A cooperative agreement entered into with a prominent seed grower in 1936 to multiply the two new introductions in California proved to be successful because the seedsman was able and willing to do the large amount of reselection necessary in order to insure uniformity. Similar arrangements have since been made with other seed concerns to multiply seed in Idaho.

California and Idaho produce practically all the seed limas used in this country. Conditions in those states insure the minimum amount of cross-pollination, and seem to be especially favorable for high yields of seed having good germinating qualities and freedom from disease and discoloration.

DESCRIPTION OF NEW VARIETIES

Early Baby Potato and Baby Potato

Classification. Two types of "Baby Potato" lima beans have been developed, differing sufficiently to be classified as separate varieties. Early Baby Potato matures at the same time as Henderson, whereas Baby Potato is fully a week later. Early Baby Potato may be used where the growing season is short, or where a planting is to be made after a crop of early peas has been removed.

Origin. Segregated in 1933 out of a single plant selection of Henderson crossed accidentally in 1932 with a potato-lima variety. Numerous very similar types have since segregated out of other varieties, mainly Wood's Prolific, Dreer's Bush, Burpee Bush, and Burpee Improved. Colored and speckled types have segregated out of the white varieties and white types out of the speckled Jackson Wonder.

Introduction. Released to one seedsman in 1936 and to other seedsmen in 1938. Offered for trial in a limited way in 1937 and 1938. Commercial seed went on sale in 1939.

Similar varieties. Baby Fordhook, bred by Roy Magruder and released by the U. S. Department of Agriculture in 1938, is very similar to Baby Potato but is not related to it in any way. Magruder[4*] describes Baby Fordhook as a cross between Fordhook and Henderson made at the Ohio Agricultural Experiment Station in 1924, but the type finally introduced was not isolated until 1935.

Baby Fordhook was compared with Baby Potato by Frazier and Magruder[3, 5*] in variety tests at Ridgely and Beltsville, Maryland. Baby Potato was later than Baby Fordhook and had slightly larger plants, broader pods and larger beans. Fordhook was 4 days and Baby Potato 12 days later than Henderson at Ridgely, but at Beltsville the differences were only 4 and 7 days, respectively. Early Baby Potato was not included in the tests. In tests at Urbana in 1938 Baby Fordhook was slightly later and less nearly uniform than Baby Potato. The shelled beans were identical. Comparisons at Urbana between Early Baby Potato, Henderson, and Baby Potato show the first two to be nearly identical in maturity and the last about a week later.

Description. Descriptive characters of the two Baby Potato varieties are given in Table 1. The plants of both are about the same size as Henderson, Baby Potato being slightly larger than Early Baby Potato. In general, there is very little to distinguish the Baby Potato varieties and Henderson plants until a few days before canning maturity. Baby Potato pods then begin to "plump up," and the beans assume the characteristic angular shape. If Baby Potato is harvested too early, a large percentage of the beans are flat and identical with Henderson in appearance. But when the beans of either of the two Baby Potato varieties are left to mature to the seed stage, nearly all of them eventually plump up.

In concentration of pod set (all the pods at the base of the plant, none on the racemes) the Baby Potato varieties are as good as the best Henderson strains, the Early Baby Potato being somewhat superior in this respect to the Baby Potato. Both Baby Potato varieties have been rigidly selected for this character. Pod concentration is important as a measure of uniformity in maturity.

In color of beans, Early Baby Potato and Baby Potato are the same. In size and shape of beans Early Baby Potato is slightly smaller and slightly plumper than Baby Potato. The pods of Early Baby Potato are *light green;* those of Baby Potato *dark glossy green.* In

general Baby Potato resembles Baby Fordhook rather closely, but is earlier and has a lighter colored pod and better pod concentration.

Canning tests of a large number of selected Baby Potato strains have shown that there is a surprisingly wide range in quality and appearance. Only the most desirable strains are being propagated.

TABLE 1.—BABY POTATO AND EARLY BABY POTATO LIMA BEANS: SUMMARY OF DESCRIPTIVE CHARACTERS

Characters	EARLY BABY POTATO	BABY POTATO
Maturity	Same as Henderson	Week later than Henderson
Plants		
Type	Very like Henderson	Slightly larger than Henderson
Compactness	Very compact	Compact
Racemes	Same as Henderson	More than Henderson
Pods on racemes	Very rare	Rare
Growth habit	Upright	Upright
Leaves		
Color	Dark green	Dark green
Gloss	Glossy	Glossy
Size	Like Henderson	Like Henderson
Pods		
Concentration at base	All pods at base	Nearly all pods at base
Color of pods	Light green	Dark glossy green
Length of pods	Slightly shorter than Henderson	Same as Henderson
Width of pods	Same as Henderson	Slightly wider than early strain
Number of beans	Three	Three plus
Crowded	Very	Usually
Beans		
Size	Slightly smaller and more angular than late strain	
Shape	Angular	Round to angular
Cross section	Plump when mature, flat when not	Not quite as plump as Early Baby Potato
Color, raw	Same as Henderson	Same as Henderson
Color, canned	Same as Henderson	Same as Henderson
Color, frozen	Brilliant green, much superior to Henderson	Brilliant green, much superior to Henderson
Color, percentages of white beans	Hold green color longer than Henderson	Hold green color longer than Henderson
Flavor, raw	Noticeably sweeter than Henderson	Noticeably sweeter than Henderson
Flavor, canned	More mealy and firmer textured than Henderson; characteristic nut-like flavor; no bitter after-flavor like Henderson	More mealy and firmer textured than Henderson; characteristic nut-like flavor; no bitter after-flavor like Henderson
Flavor, frozen	Same flavor as when canned	Same flavor as when canned
Vining characters		
Total shelling percentage	Same as Henderson	Same as Henderson
Ease of vining	Same as Henderson	Same as Henderson
Bruising	Less than Henderson, firmer texture	Less than Henderson, firmer texture
Breakage	Fewer broken beans than Henderson	Fewer broken beans than Henderson
Sieve sizes	About same as Henderson	A small percentage of beans larger than Henderson
Seeds		
Color	White	White
Size	Slightly shorter and wider than Henderson; 1000 to 1100 seeds per pound	Slightly shorter and wider than Henderson; 1000 to 1100 seeds per pound
Comparative size	Slightly smaller and plumper than late strain	
Thickness	Considerably thicker than Henderson	Considerably thicker than Henderson

Fig. 2.—Canned lima beans, Baby Potato variety

Note the plumpness of the beans. The grade illustrated is "medium," one of the larger sieve sizes. The "midget" grade, approximately half the size of "medium," is even more attractive.

Baby Potato variety is somewhat higher in quality than Early Baby Potato. A number of canning tests including an extensive one in 1939 indicate that the best strains in the Baby Potato group are considerably superior to Henderson in quality. When Henderson is canned, the texture is soft and mushy, the flavor flat and sometimes metallic, frequently leaving a bitter taste in the mouth. The Baby Potato varieties resemble Fordhook somewhat in flavor—distinctly sweet when eaten raw, and when canned, mild and nut-like with no bitter after-taste. In texture the Baby Potato varieties are firmer than Henderson and slightly mealy like other potato limas.

Frozen Baby Potato and Early Baby Potato limas have a brilliant green color quite unlike the dull shades which develop in Henderson. Tho the Baby Potato varieties are white seeded, they retain their green color at canning stage a little longer than Henderson. Quite a number of freezing tests of the Baby Potato varieties have been made and some commercial packs have been put up. According to the results of these tests, the Baby Potato varieties may replace Henderson for freezing purposes.

Canners and freezers who have packed considerable acreages find the Baby Potato varieties are just as easy to vine as Henderson; in fact, because of firmer texture, fewer of the beans became cracked and bruised in the vining process.

Seed germination has proved to be consistently good under a wide variety of conditions. Packers have had no difficulty in planting Baby Potato seed with the same equipment used for Henderson.

Comparative yields. In yield trials Baby Potato has usually proved slightly superior to Early Baby Potato, tho the differences have not been constant.

In trials at Urbana and elsewhere the Baby Potato varieties have consistently yielded more than Henderson. In tests at Beltsville, Maryland, however, Magruder and Frazier[5*] found no essential difference in canning yield between Henderson and the new thick-seeded varieties.

A considerable quantity of seed of Baby Potato and Early Baby Potato has been sent out for trial in 1938 and 1939, but it has been very difficult to secure comparative yield records with standard varieties. According to the information that has been obtained, the Baby Potato varieties apparently require the same soil and climatic conditions as Henderson. The yields in general seem to be the same or better. The important gain over Henderson is in quality. In a canning test of Early Baby Potato and Henderson at Lakemills, Wisconsin, in 1938, both varieties tested 99 percent green beans, but in yield of shelled green beans Early Baby Potato was slightly higher: Early Baby Potato, 2,540 pounds; Henderson, 2,316 pounds. The exact area from which the yields were obtained was not recorded, but the two plots were identical in size and were about one acre each.

TABLE 2.—YIELD AND CANNING TESTS OF THREE COMMERCIAL STRAINS OF BABY POTATO AND ONE OF EARLY BABY POTATO, IN COMPARISON WITH HENDERSON VARIETY, ILLINOIS, 1939

Variety and strain	Shelled beans per acre	White beans	Quality of canned beans				
			Color	Flavor	Tenderness	Texture	Grade[a]
	lb.	*perct.*					
Baby Potato, 2489	1 296	11.8	Good	Good	Tender	Slightly mealy	F
Henderson	889	8.5	Good	Fair	Slightly tough	Mealy	F −
Baby Potato, 2353	1 296	8.7	Good	Good	Tender	Slightly mealy	F
Henderson	1 296	10.0	Fair	Fair	Tough	Mealy	E.S. +
Baby Potato, 379	2 223	11.9	Good	Good	Tender	Slightly mealy	F
Henderson	1 222	6.1	Fair	Fair	Slightly tough	Mealy	F −
Early Baby Potato, 377	1 148	6.6	Good	Fair	Fairly tender	Slightly mealy	F
Henderson	1 296	10.0	Fair	Fair	Tough	Mealy	E.S. +

[a]Grades in descending order are Fancy (F), Fancy minus (F −), and Extra Standard plus (E.S. +).

An extensive trial to determine the relative values of 54 Baby Potato selections was conducted in 1939 in Illinois. Yields of the Baby Potato selections were equal to or superior to those of Henderson, and the quality of the canned Baby Potato beans was noticeably better. The performance of the three commercial strains of Baby Potato and one of Early Baby Potato which were included in the test is summarized in Table 2. One of the commercial strains, "377," yielded slightly less than the Henderson check, but the check was in this instance over-mature.

Other tests of both Baby Potato varieties were made in the following regions during 1938, with the results indicated:

California	Favorable freezing tests
Idaho	Favorable
Maryland	Favorable
Michigan	Small test, results uncertain
Minnesota	Favorable
New Jersey	Favorable; canners and freezers need small potato types
New York	Experiment Station tests uncertain and to be continued; commercial tests for freezing favorable

Fig. 3.—Vines of new varieties of lima beans: Illinois Large Podded (*left*), and Baby Potato (*right*)

Utah.....Favorable canning tests
Washington (Prosser).....Apparently promising enough to continue tests
Washington (Puyallup).....Season too short
Wisconsin (Madison).....Promising for canners

Illinois Large Podded

Origin. Selected out of a cross between two individual plant selections of Henderson. First mentioned in the Forty-Eighth Annual Report of the Illinois Agricultural Experiment Station 1934-35, pages 279-280, under the name "Large Podded Henderson Bush." Introduced under the name Illinois Large Podded.

Similar varieties. The seed beans resemble those of Wood's Prolific; and in the field the variety resembles Wood's Prolific and New Philadelphia, which, however, are inferior to Illinois Large Podded both in yield and uniformity. In addition both Wood's Prolific and New Philadelphia are later than Illinois Large Podded.

Description. Descriptive characters of Illinois Large Podded are given in Table 3. Illinois Large Podded is a large-vined bush lima, of the same class as Wood's Prolific—a truck grower's variety, not a canning type. It was bred with the idea of obtaining for Illinois growers a large-podded bean acceptable to housewives in place of Fordhook, a variety producing very poorly in Illinois. Illinois Large Podded has a "paper" pod, is easily shelled, has a good shelling percentage, and has culinary qualities which, tho not equal to Fordhook, are acceptable.

The vines of Illinois Large Podded are very vigorous, and pods set freely even in hot weather. In repeated tests in Illinois the variety has been as sure a cropper as Henderson, but has yielded more. The pods are large, more than 3½ inches in length and 1 inch in width, and are attractive when picked. The beans are large and flat. After the beans are mature harvesting cannot be delayed long, because the beans turn white as soon as Henderson. Since the pods are largely concentrated at the base of the vine, maturity is uniform. Vine growth is upright and the beans are held well off the ground, resulting in a relatively small percentage of rotted pods. The seeds are white and large, running 800 to 900 per pound, as compared with 1000 to 1100 of Baby Potato and 1150 to 1250 of Henderson.

Results of yield tests. In tests at Beltsville, Maryland, by Magruder and Frazier,[5*] Illinois Large Podded produced more beans than such other large-podded varieties as Dwarf Large White, Burpee Improved Bush, New Improved Bush, Fordhook, and Dreer's Bush—

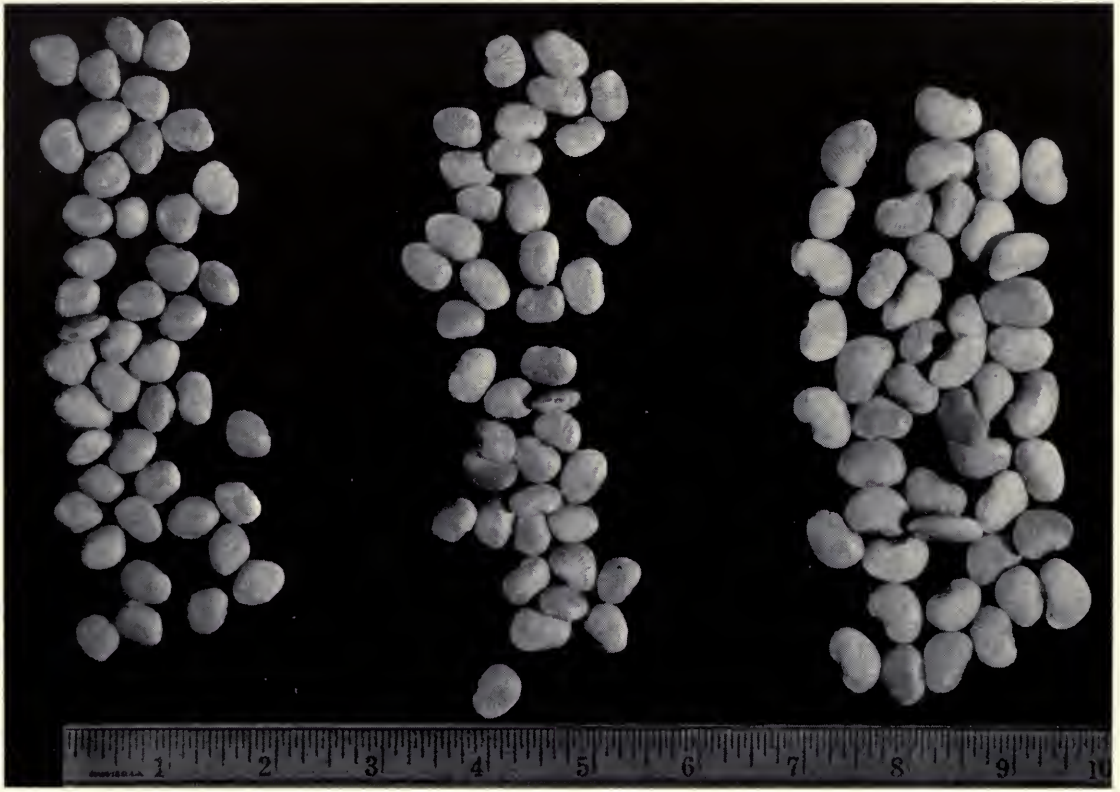

Fig. 4.—Seed of new varieties of lima beans: Early Baby Potato (*left*); Illinois Large Podded (*right*); and Henderson (*center*), used as the standard for comparison

Note the plumpness of the Early Baby Potato seeds and their smaller size as compared with Henderson. Illinois Large Podded has noticeably larger seed than Henderson.

TABLE 3.—ILLINOIS LARGE PODDED LIMA BEAN: SUMMARY OF DESCRIPTIVE CHARACTERS

Characters	Description	Characters	Description
Maturity	7 to 9 days later than Henderson	*Beans (cont.)*	
Plants		Flavor, raw	Very similar to Henderson
Type	Resemble Wood's Prolific, but more compact	Flavor, canned	Not recommended, but flavor equal to Henderson
Compactness	Moderately compact	Flavor, frozen	Several reports show quality to be fair, but nothing outstanding
Racemes	Fairly numerous		
Pods on racemes	Few, less than other varieties in this class	*Vining character*	
Growth habit	Upright, pods well off the ground	Total shelling percentages	Equal to Henderson
		Ease of vining	Some difficulty unless proper screens are provided
Leaves		Bruising	Flat shape causes many beans to remain on apron and many of these are badly bruised
Color	Dark green		
Gloss	Glossy		
Size	Large, resemble leaves of Wood's Prolific	Breakage	Texture fairly firm, breakage normal
Pods		Sieve sizes	Larger than desirable for canning; runs heavily to No. 3 size (over $^{39}/_{64}$" but thru $^{35}/_{64}$" screen) and No. 4 size (over $^{35}/_{64}$" screen)
Concentration at base	Fairly good		
Color of pods	Light green		
Length of pods	3½ to 4½ inches		
Width of pods	⅞ to 1⅛ inches		
Number of beans	3 to 4		
Beans			
Shape	See Fig. 1		
Cross section	Flat	*Seeds*	
Color, raw	Same as Henderson	Color	White
Color, canned	Tends to develop a grayish-green color	Size	Slightly larger than Wood's Prolific, 800 to 900 seeds per pound
Color, frozen	Same as Henderson		
Color, percentages of white beans	Holds green color as well as Henderson		

and this in spite of the fact that 15 percent of the Illinois Large Podded plants had pods like Henderson. The presence of Henderson-type vines and pods on Illinois Large Podded has been noted also at Urbana when the seed was sown too thick. Illinois Large Podded has a much larger vine than Henderson, and planting distances in the row should average 5 to 6 inches instead of 3 to 4 inches as for Henderson.

In a test in South Carolina, Andrews[1*] compared Illinois Large Podded (which he called Large-Seeded Henderson) with Wood's Prolific and Henderson on plots which were replicated five times. The results were as follows:

	Pounds of green beans per acre
Henderson	5,804
Wood's Prolific	7,398
Illinois Large Podded	7,289

Both large-seeded varieties had significantly higher yields than Henderson.

Mahoney and Brown[6*] ran extensive trials of large-podded lima beans in 1938 on Sassafras sandy loam near Salisbury, Maryland, eight varieties being grown in duplicate on randomized plots. Illinois Large Podded was the outstanding variety in these tests, according to the statement of these investigators: "The outstanding variety tested this year was Illinois Large Podded, developed at the Illinois Experiment Station. Pods are slightly longer than Fordhook but are also much lighter in weight. . . . The difference in yield between Early Giant and Illinois Large Podded is not significant."[6*] The results obtained in these tests were as follows:

Variety	*Pounds of unshelled beans per acre**	*Number of pods per pound*	*Shelling percentage*	*Average length of pods (inches)*
Early Giant Podded	1,455	45	93	3.8
Dreer's Wonder Bush	1,951	48	90	3.4
Improved Giant	2,149	55	93	3.5
Early Wilson	2,695	40	95	3.4
Early Giant	4,298	48	92	3.9
Fordhook	2,364	55	90	3.0
Burpee	2,066	48	93	4.2
Illinois Large Podded	6,116	62	93	3.5

(*Difference required for significance (5% level) = 2,266 pounds.)

Other tests of Illinois Large Podded have been made; but inasmuch as practically all of them were more or less defective, only a general summary of the results may be given. Apparently the large flat varieties can be grown wherever Henderson succeeds. And since Illinois Large Podded is one of the earliest of the large flat varieties, it is more likely to produce well than the later types now in general use.

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